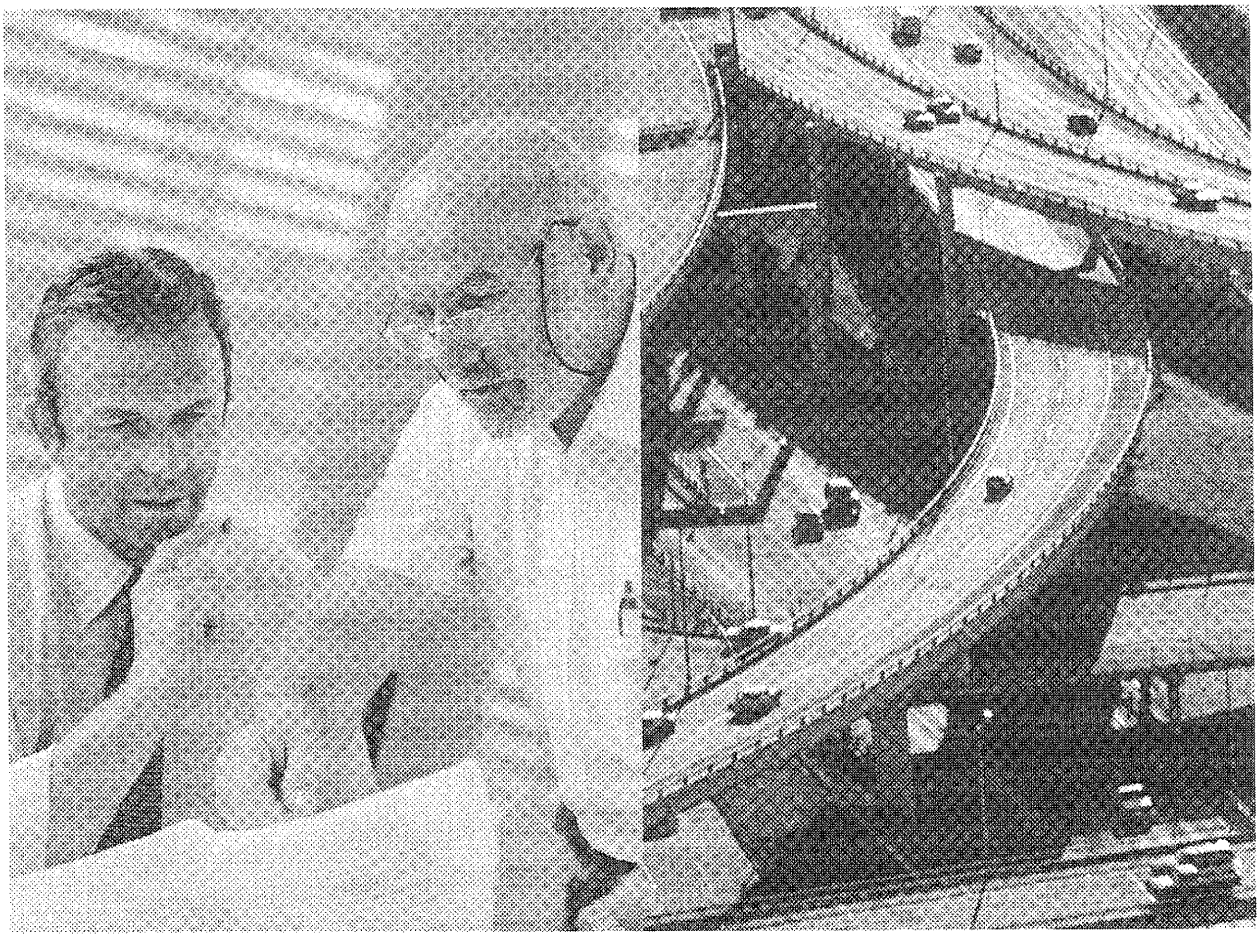
AASHTO

A Policy on the Accommodation of Utilities Within Freeway Right-of-Way, 2005



A Policy on the

Accommodation of Utilities Within Freeway Right-of-Way

October 2005

American Association of State Highway and Transportation Officials

Prepared by the AASHTO Technical Committee on Geometric Design

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(1) AASHTO. *A Guide for Accommodating Utilities Within Highway Right-of-Way.* American Association of State Highway and Transportation Officials. Washington, DC, 2005.

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(3) AASHTO. *Roadside Design Guide.* American Association of State Highway and Transportation Officials. Washington, DC, 2002.

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INTRODUCTION

Freeways are highways with full control of access. They are intended to provide for high levels of safety and efficiency in the movement of large volumes of traffic at high speeds. With full control of access, preference is given to through traffic by providing access only at selected locations.

Control of access can be materially affected by the extent and manner in which utilities cross or otherwise occupy the highway right-of-way. The state transportation agencies have various degrees of authority to develop and maintain control of access and to regulate utilities, generally through their authority to designate and to control the use of right-of-way acquired for public highways, including those of all freeways. Their authority depends upon Federal and state laws or regulations. These laws and regulations differ between states and may also be different within a state for highways using existing right-of-way and for highways on new location. A state may also have separate laws and regulations applicable only to highways on right-of-way subject to jurisdiction of a local government such as that of a large city.

A uniform policy is needed to establish the conditions under which public and private utilities may be accommodated on the freeway right-of-way. It is the intent of this policy to establish procedures whereby the individual state transportation agencies may uniformly administer the accommodation of utilities on freeways. While the policy has as its primary purpose improving and maintaining highway safety and operation, and insuring uniformity of utility treatment among the states, it recognizes the public interest in avoiding unnecessary and costly operation and relocation of public utilities. It is not the intent of this policy to impose restrictions on the future installation of utility crossings that would obstruct the development of expanding areas adjacent to the freeways.

This policy applies to all highways with full control of access, regardless of system. Also, it has value as a guide for all highways with partial control of access, especially if a highway corridor is a mixture of segments with both full and partial control of access. For highways without control of access refer to AASHTO's *A Guide for Accommodating Utilities within Highway Right-of-Way (1).*

The policy can be applied in most states by existing authority. Those states in which laws will not permit the application of this policy in its entirety should strive for uniformity through the enactment of appropriate legislation. This policy makes no reference to reimbursement to utilities for the cost of adjusting or installing facilities on freeway right-of-way. Reimbursement is subject to state laws and policy.

STATEMENT OF POLICY

1. Applicability

This policy applies to utilities located within the freeway right-of-way.

The principles set forth in this policy apply to all public and private utilities including but not limited to communication (including cellular towers), electric power, cable television, water, gas, oil, slurry, petroleum products, steam, sewer, drainage, irrigation, and similar facilities. Such utilities may involve construction and maintenance of underground, surface or overhead facilities, either singularly or in combination.

This policy does not apply to utilities for servicing facilities needed for operating the freeway. This policy also does not apply to the public–private partnerships for the installation and shared use of wire line and/or wireless telecommunication facilities on freeways (Shared Resource Projects).

Information on the implementation, planning, design, and construction of Shared Resource Projects is contained in the AASHTO's *Guidance on Sharing Freeway and Highway Rights-of-Way for Telecommunications (2).*

2. New Utility Installations Along a Freeway

Installation of new utilities shall not be permitted longitudinally within the control of access lines of any freeway, except that in special cases such installations may be permitted under strictly controlled conditions.

Where such longitudinal installations are requested, the utility shall in each case show to the transportation agency's satisfaction that all the following conditions are met:

- The accommodation will not adversely affect the safety, design, construction, traffic operations, maintenance, or stability of the freeway.
- Alternate locations are not available or are cost prohibitive, from the standpoint of providing efficient utility services.
- It will not interfere with or impair the present use or future expansion of the freeway.
- The location of the utility outside of the right-of-way would result in the loss of productive agricultural land, or loss of productivity of agricultural land, if any. In this case, the utility must provide information on the direct and indirect environmental and economic effects, which will be evaluated and considered by the transportation agency pursuant to Title 23, U.S. Code Section 109(l)(1).
- The accommodation satisfies the conditions of Section 7.

All longitudinal utility accommodations as may be warranted herein shall only be in accordance with an approved permit issued by the transportation agency.

Installation of utilities shall not be allowed longitudinally within the median area.

Where longitudinal utility installations must traverse interchange areas, they shall be located and treated in the same manner as utility crossings within interchange areas, as in Section 5.

Service connections to adjacent properties shall not be permitted from longitudinal utility installations located within the access control lines of a freeway.

3. Existing Utilities Along Proposed Freeways.

Where a utility already exists within the proposed right-of-way of a freeway and it can be serviced, maintained, and operated without access from the through traffic or ramp roadways, it may remain as long as it does not adversely affect the safety, design, construction, traffic operations, maintenance, or stability of the freeway. Otherwise, it must be relocated, except for special cases as covered by Section 2.

4. Major Valley or River Crossings

Where a freeway crosses a major valley or river on an existing structure, any utility carried by the structure at the time the highway route is improved may, when approved by the transportation agency, continue to be carried when relocation of the utility would be very costly and provided the utility can be serviced without significant interference with road users.

Expansion of a utility carried by an existing structure across a major valley or river may be permitted provided the utility can be installed and serviced without significant interference with road users.

New utility installations will not be permitted on a structure across a major valley or river at or after the time the highway route is improved, except for special cases as covered by Section 2.

For security purposes, gas, oil, sewer, or other hazardous utility facilities should not be allowed on structures identified as most critical by the transportation agency.

5. Utilities Crossing Freeways

New utility installations and adjustments or relocations of existing utilities may be permitted to cross a freeway. To the extent feasible and practicable, they should cross on a line generally perpendicular to the freeway alignment and preferably be located under the freeway.

Utilities Along Roads or Streets Crossing Freeways

Where a utility follows a crossroad or street which is carried over or under a freeway, provisions should be made for the utility to cross the freeway on the location of the crossroad or street in such manner that the utility can be constructed and/or serviced without access from the through traffic or ramp roadways. Generally the utilities are to be located within the right-of-way of the crossroad or street, existing or relocated, and may cross over or under the freeway or be carried on or through the highway grade separation structure, provided installation and servicing thereof can be accomplished without access from the through traffic or ramp roadways. Where distinct advantage and appreciable cost saving is effected by locating the utilities outside the right-of-way of the crossroad or street they may be so located, in which case they shall be located and treated in the same manner as utility lines crossing the freeway at points removed from grade separation structures as in 5(B) and 5(C).

Overhead Utility Crossings

Overhead utility lines crossing a freeway at points removed from grade separation structures, or those crossing near a grade separation but not within the right-of-way of a crossroad or street, in general, should be adjusted so that supporting structures are located outside the outer edges of through traffic or ramp roadway side slopes and preferably outside the control of access lines. In any case, supporting poles shall not be placed within the clear zone as determined using procedures in the current edition of the AASHTO *Roadside Design Guide (3)*. Where spanning limitations so require, intermediate-supporting poles may be placed in medians of sufficient width to provide the above referenced clear zone from the edges of both traveled ways, provided the conditions of Section 7, are also met. If additional lanes are planned, the clear zone shall be determined from the ultimate edges of the traveled way. Where right-of-way lines and control of access lines are not one and the same, as where frontage roads are provided, supporting poles may be located in the area between them with appropriate shielding. In extraordinary cases where such spanning of the roadways is not feasible, conversion to underground facilities to cross the freeway may be considered.

At interchange areas, in general, support for overhead utilities should be permitted only where all of the following conditions are met: (a) the above indicated clear zone is provided with respect to the freeway through-traffic lanes, (b) the appropriate clear zone from edge of ramp is provided as designated in the above referenced AASHTO *Roadside Design Guide (3)*, (c) essential sight distance is not impaired, and (d) the conditions of Section 7 are satisfied.

The vertical clearance to overhead utility lines crossing freeways shall be determined by the state but in no case shall be less than the clearance required by the *National Electrical Safety Code (4)*.

Underground Utility Crossings

Utilities crossing underground shall be of durable materials and so installed as to virtually preclude any necessity for disturbing the roadways to perform maintenance or expansion operations. The design and types of materials shall conform to appropriate governmental codes and specifications.

Utility access holes and other points of access to underground utilities may be permitted within the right-of-way of a freeway or ramps only when they are located beyond the shoulders of the freeway or ramps as planned for later widening. This access may be permitted provided the conditions of Section 7 are satisfied.

Irrigation Ditches and Water Canals

Except for necessary crossings, water canals and irrigation ditches should be excluded from the right-of-way of freeways, except for special cases as covered by Section 2. Crossings may be made by underground siphon, or through culverts, or bridges as appropriate to the size of the canal, topographic conditions, and highway safety aspects. In general, locations and structures are to be designed in the same manner, as are facilities for natural transverse drainage.

Servicing or patrolling such facilities shall be from outside the control of access lines. Ditch-walkers or ditch-riders shall not be permitted to indiscriminately cross the freeway at grade. Under appropriate traffic control arrangements, special ditch cleaning equipment may be permitted to cross the freeway at grade in those cases where considerable extra travel distance would otherwise be required to use grade separation structures.

Provisions for Expansion of Utilities

When utilities are relocated or adjusted in conjunction with construction of a freeway, provisions may be made for known and planned expansion of the utility facilities, particularly those underground. They should be planned to avoid interference with traffic at some future date when additional or new overhead or underground lines are installed.

6. Utilities in Vehicular Tunnels

As a general rule, utilities shall not be permitted to occupy vehicular tunnels on freeways on new location, except in special cases as covered by Section 2. Utilities, which have not previously occupied an existing vehicular tunnel that is incorporated in a freeway, shall not be permitted therein, except in special cases as covered by Section 2.

Utilities, which transport a hazardous material, shall not be allowed in a vehicular tunnel under any circumstances.

Where a utility occupies space in an existing vehicular tunnel that is converted to a freeway, relocation of the utility may not be required.

7. Access for Constructing and Servicing Utilities

In general, utilities shall be located and designed in such a manner that they can be constructed and/or serviced without direct access from the through traffic or connecting ramp roadways. In rare instances, direct access may be permitted where alternate locations and means of access are unavailable or impractical due to terrain and environmental constraints, and such use will not adversely affect safety and traffic operations, or damage the transportation agency's facility. Where direct access is requested, a permit must be obtained from the transportation agency.

Access for construction and/or servicing a utility along or across a freeway should be limited to access via (a) frontage roads where provided, (b) nearby or adjacent public roads and streets, or (c) trails along or near the highway right-of-way line, connecting only to an intersecting road. A locked gate along the freeway fence may be used to meet periodic service access needs. When a locked gate is allowed, the access should be documented with an approved permit that includes adequate provisions to restrict unauthorized use.

In those special cases where utility supports, utility access holes, or other appurtenances are located in medians, interchange areas, or otherwise inaccessible portions of freeway right-of-way, access to them from through traffic or ramp roadways may be permitted when other alternatives do not exist. Such access shall be by permit setting forth the conditions for policing and other controls to protect highway users.

Entry to the median area should be restricted where possible to nearby grade separation structures, stream channel crossings, or other suitable locations not involving direct access from through traffic lanes or ramps.

Where utilities are located outside the control of access line and access for maintenance purposes is only possible from within the freeway right-of-way, due to terrain and/or environmental constraints, a permit must be obtained from the transportation agency.

All permits shall include a traffic control plan and adequate provisions for access to the utility work zone, and provide for protection of workers and the traveling public.

Advance arrangements should also be made between the utility and the transportation agency for emergency maintenance procedures.

8. Construction and Location Details

The transportation agency that constructs or maintains freeways has the right to review and approve or reject plans for the location and design of all utility installations and adjustments affecting the highway and issue a permit for the work. Upon completion of construction, the utility shall provide accurate as-built plans, as requested by the transportation agency.

Transportation agencies should expect plans that show the following details regarding the proposed facility:

- Offset to the facility from the right-of-way line, edge of traveled way, or both. If the offset does not remain at a constant distance from the point of measurement, the locations and distance changes at each point of intersection should be shown.

- Depth at various locations should be shown or should be defined on typical sections.
- Depths and locations of other utilities in the immediate area.
- Location of directional bores, plowing, or trench operations.
- Treatment of roadside vegetation (bored, cut, pruned, avoidance, etc.) especially if it was planted by the transportation agency for aesthetics or snow control.
- The replacement vegetation to be planted to replace items that are damaged or removed during utility installation.
- Location of sensitive environmental areas such as wetlands, hazardous material sites, historical sites, endangered species habitats, etc.
- Type of location of erosion control measures.
- Access points from various side roads, farm fields, etc.
- Locations where permanent locked gates will be installed.
- Special orders regarding construction methods should be noted if they are mandated by another regulatory agency such as a Public Service Commission, Army Corps of Engineers, etc.
- Traffic Control Plan.

9. Manner of Making Utility Installations and Adjustments

In general, utility installations and adjustments are to be made with due consideration to highway and utility costs and in a manner that will provide maximum safety to the highway users, will cause the least possible interference with the highway facility and its operation, and will not increase the difficulty of or cost of maintenance of the highway.

Details for utility installations and adjustments within freeway right-of-way shall be in accordance with the AASHTO *A Guide for Accommodating Utilities Within Highway Right-of-Way (1).*

GLOSSARY

Arterial Highway—A general term denoting a highway primarily for through traffic, usually on a continuous route.

Clear Zone—The total roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a clear run-out area. The desired width is dependent upon the traffic volumes and speeds, and on the roadside geometry.

Control of Access—The condition where the right of owners or occupants of abutting land or other persons to access, light, air, or view in connection with a highway is fully or partially controlled by public authority.

> **Full Control of Access**—The authority to control access is exercised to give preference to through traffic by providing access connections with selected public roads only by prohibiting crossings at grade or direct private driveway connections.
>
> **Partial Control of Access**—The authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at grade and some private driveway connections.

Expressway—A divided arterial highway for through traffic with partial control of access and generally with grade separations at major intersections.

Freeway—A controlled access divided arterial highway with grade separations at intersections.

Frontage Road—A local street or road auxiliary to and located on the side of an arterial highway for service to abutting property and adjacent areas and for control of access.

Highway, Street, or Road—A general term denoting a public way for the transportation of people, materials, goods, and services but primarily for vehicular travel, including the entire area within the right-of-way.

Interchange—A system of interconnecting roadways in conjunction with one or more grade separations that provides for the movement of traffic between two or more roadways or highways on different levels.

Median—The portion of a divided highway separating the traveled ways for traffic in opposite directions.

Permit—The written agreement by which the transportation agency approves the use and occupancy of highway right-of-way by utility facilities or private lines. Also called Occupancy Agreement.

Private Lines—Privately owned facilities, which convey or transmit the commodities outlined in the definition of utility facilities, but are devoted exclusively for private use.

Ramp—A short roadway connecting two or more legs of an interchange, intersection, or a frontage road and main lane of a highway.

Rest Area—A roadside area with parking facilities separated from the roadway provided for motorists to stop and rest for short periods. It may include drinking water, toilets, tables and benches, telephones, information, and other facilities for travelers.

Right-of-Way—A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Roadside—A general term denoting the area adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside.

Roadway—The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways.

Temporary Barrier—Temporary barriers are used to prevent vehicular access into construction or maintenance work zones and to redirect an impacting vehicle so as to minimize damage to the vehicle and injury to the occupants, while providing worker protection.

Traffic Barrier—A barrier used to prevent a vehicle from striking a more severe obstacle or feature located on the roadside or in the median, or to prevent crossover median accidents.

Traffic Control Plan—A plan for handling traffic through a specific highway or street work zone or project.

Transportation Agency—The department, agency, commission, board or official of any state or political subdivision thereof charged by its law with the responsibility for highway administration.

Traveled Way—The portion of the roadway for the movement of through traffic.

Utility Access Hole (Manhole)—An opening in an underground system which workers may enter for the purpose of making installations, removals, inspections, repairs, connections, and tests.

Utility Accommodation Policy—A statement of the policies and procedures used by a transportation agency to regulate and accommodate utilities on the highway right-of-way.

Utility Facility—A privately, publicly, or cooperatively owned line, facility, or system for producing, transmitting, or distributing communications, cable, heat, gas, oil, crude products, water, steam, waste, storm water not connected with highway drainage, or any other similar commodity, including any fire or police signal system or street lighting system, which directly or indirectly serves the public.